Patient Education and Counseling xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou

Review Article

Training interventions for healthcare providers offering group-based patient education. A scoping review

Olöf Birna Kristjansdottir[a,*], André Vågan[a], Margrét Hrönn Svavarsdóttir[b], Hilde Blindheim Børve[a], Kari Hvinden[a], Veerle Duprez[c], Ann Van Hecke[c,d], Lena Heyn[e], Hilde Strømme[f], Una Stenberg[a,g]

[a] The Norwegian National Advisory Unit on Learning and Mastery in Health, Oslo University Hospital, Oslo, Norway
[b] School of Health Sciences, University of Akureyri, Akureyri, Iceland
[c] University Centre for Nursing and Midwifery, Department of Public Health and Primary Care, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium
[d] Staff Member Nursing Department, Ghent University Hospital, Ghent, Belgium
[e] Faculty of Health and Social Sciences, Department of Nursing and Health Sciences, University of South-Eastern Norway, Drammen, Norway
[f] University Library, Medical Library, University of Oslo, Oslo, Norway
[g] Frambu Competence Center for Rare Diagnoses, Siggerud, Norway

ARTICLE INFO

Article history:
Received 25 August 2020
Received in revised form 18 November 2020
Accepted 13 December 2020

Keywords:
Professional competence
Training
Patient education
Groups
Self-Management support
Scoping review

ABSTRACT

Objectives: To provide overview of research on training interventions for healthcare providers aimed at promoting competencies in delivering group-based patient education.
Methods: A systematic literature search identified relevant studies. Data was extracted on training details, study design, outcomes and experiences. Results were summarized and qualitative data analyzed using content analysis.
Results: Twenty-seven studies exploring various training interventions were included. Ten studies used qualitative methods, eight quantitative and nine mixed methods. Use of a comparison group, validated instruments and follow-up measures was rare. Healthcare providers' reactions to training were mostly positive. Several studies indicated positive short-term effects on self-efficacy and knowledge. Results on observed skills and patient outcomes were inconclusive. Results on healthcare providers' experience of delivery of group-based patient education following training were categorized into 1) Benefits of training interventions, 2) Barriers to implementation and 3) Delivery support.
Conclusions: Further evaluation of training for healthcare providers delivering group-based patient education is needed before conclusions on training efficacy can be drawn. The results indicate an expanding research field still in maturation.
Practice implications: Efficacy studies evaluating theoretically grounded training with clear attention on group facilitation and follow-up support are needed. Inclusion of validated instruments and long-term outcomes is encouraged.

Contents

* Corresponding author at: Oslo University Hospital, The Norwegian National Advisory Unit on Learning and Mastery in Health, Postbox 4959 Nydalen, 0424 Oslo, Norway.
E-mail address: olof@mestring.no (O.B. Kristjansdottir).

https://doi.org/10.1016/j.pec.2020.12.006

1. Introduction

Chronic conditions are a leading cause of disability and death worldwide [1,2]. Self-management, which is essential for people affected, refers to the individual's ability to manage symptoms, treatment, physical and psychosocial consequences and lifestyle changes that follow a chronic condition [1]. Healthcare providers (HCPs) play a key role in providing self-management support with patient education (PE) [3,4]. Patient education is the process of influencing patient behavior and generating the changes in knowledge, attitudes and skills needed to maintain or improve health [5]. Self-management support may include providing information, emotional support and assistance in lifestyle changes [6]. Patient education can be delivered individually and/or in a group and the formats have their different strengths. Group-based PE allows patients to develop self-efficacy in self-management by learning with and *from* each other [7,8]. Effectiveness and cost-effectiveness of group-based programs on patient outcomes has been established for several conditions [4,9,10].

Healthcare providers' education competencies have been defined as "integration of professionalism, teaching, and empowering in the co-creation of knowledge and skills to achieve behavioral change" [11]. To provide effective PE in groups, HCPs also need to handle the added complexity of the group element and manage the group as a whole [12]; HCPs must balance didactic, experiential and interactive elements in a way that facilitates sharing of knowledge and experiences, and tailor content to suit group member needs [13]. Succeeding with this may require changes in mindset, knowledge and skills.

Observations of and reports by HCPs indicate lack of training in group-based PE, specifically in the theory behind PE and skills related to group enablement and self-management support such as goal setting [14–18]. Healthcare providers' unmet learning needs and lack of competence is concerning since it may lead to PE being disseminated with sub-optimal quality, thus compromising effectiveness [14,16].

Several recent reviews have studied the outcome of training to promote PE competencies on HCPs' knowledge, confidence, skills or performance when providing PE in practice. They suggest that important training elements include a clear theoretical framework, experiential learning with feedback, reflection, interactivity and follow-up [19–21]. Those reviews explore training in PE without specific attention to the group format. Given the importance of skills in group-based PE, dissemination of research on group-targeted training is warranted. The aim of this study is to give an overview of training for HCPs in providing PE in groups and the potential impact on HCPs competencies.

The following questions are addressed:

1. What study designs, outcomes and measures are described?
2. What kinds of training interventions are described?
3. What outcomes and experiences are associated with participating in the training?

2. Methods

Preliminary searches indicated a limited number of relevant studies and a scoping review method was therefore chosen to draw evidence from different study designs, beneficial in an emerging field [22]. This review was guided by a five-stage framework [22].

2.1. Stage 1

A study group was assembled and initial research questions defined. The group consisted of seven PE researchers and two HCPs experienced in group-based PE and in training HCPs.

2.2. Stage 2

A systematic search was conducted by a medical research librarian. The following electronic databases were searched: MEDLINE (Ovid), Embase (Ovid), PsycINFO (Ovid), ERIC (Ovid), AMED (Ovid), CINAHL (EBSCO), SveMed + and Cochrane Library (Wiley). Searches included subject headings and text words with synonyms for 1) HCPs, 2) training, 3) PE, 4) professional competence and 5) group. Studies were included if they: involved training in group-based PE, described training aimed at HCPs, reported outcomes associated with HCPs' competencies, were published between January 2000 and February 2019, were in English, Danish, Norwegian or Swedish and reported primary research (see Appendix A in Supplementary material). Some criteria were adjusted during the early screening process. First, training in recovery-oriented approaches was excluded since

recent reviews exist [23,24]. Second, studies where the PE was defined as therapy were excluded as this was considered beyond the scope of this review. Lastly, studies describing tools for group-based programs, but not training in using them, were excluded. After eliminating duplicates, we removed obviously irrelevant studies based on titles.

2.3. Stage 3

Two authors independently screened the remaining abstracts. Full-text articles were screened independently by two authors. Disagreement was resolved by a discussion between authors. To identify as many relevant studies as possible, a snowballing search was performed by searching reference lists and references citing the included studies. At this point we included studies published after our original search timeframe. If titles were considered relevant the abstract was read and when found relevant, two authors independently screened the full-text.

2.4. Stage 4

Following data was extracted: 1) characteristics of the training (aim, theoretical background, key content, training methods, duration and trainers), 2) HCPs' characteristics and setting, 3) Patient population and type of PE and 4) Study design, methods, sample size and key results.

2.5. Stage 5

Key study results were summarized. To map the impact of training we used the four-level model of Kirkpatrick (1996), widely used for appraisal of evidence of training [25]. Hence, the outcomes were categorized as: 1) reactions to training; 2) learning (acquired attitudes, knowledge and/or skills) and 3) behavior (ability to apply knowledge and skills in practice), and 4) results (patient outcomes). To document results from qualitative studies in greater detail, a category on "experiences of delivery" was included containing HCPs' (participating in training) experiences of group-based PE. This data was analyzed by two authors with an inductive conventional content analysis approach [26]. They read the results sections of the relevant qualitative studies and identified preliminary themes. Preliminary themes were discussed, adjusted and finally broad themes were agreed upon by the research group. The quality of the included studies was assessed independently by two authors using the Mixed methods appraisal tool (MMAT) [27]. Disagreements were resolved in discussion between the two authors.

3. Results

3.1. Screening process

The search identified 9681 records, 6560 of which were unique. Removal of irrelevant titles left 3941 records. Abstract screening eliminated all but 242 studies, of which 82 were only available in abstract form. Of the remaining 160 studies, 146 were excluded, most frequently because: 1) the training did not involve group format, 2) not primary research or 3) HCPs outcomes not included. Snowballing gave 13 additional studies, resulting in 27 studies being included in the review. The selection process is shown in Fig. 1.

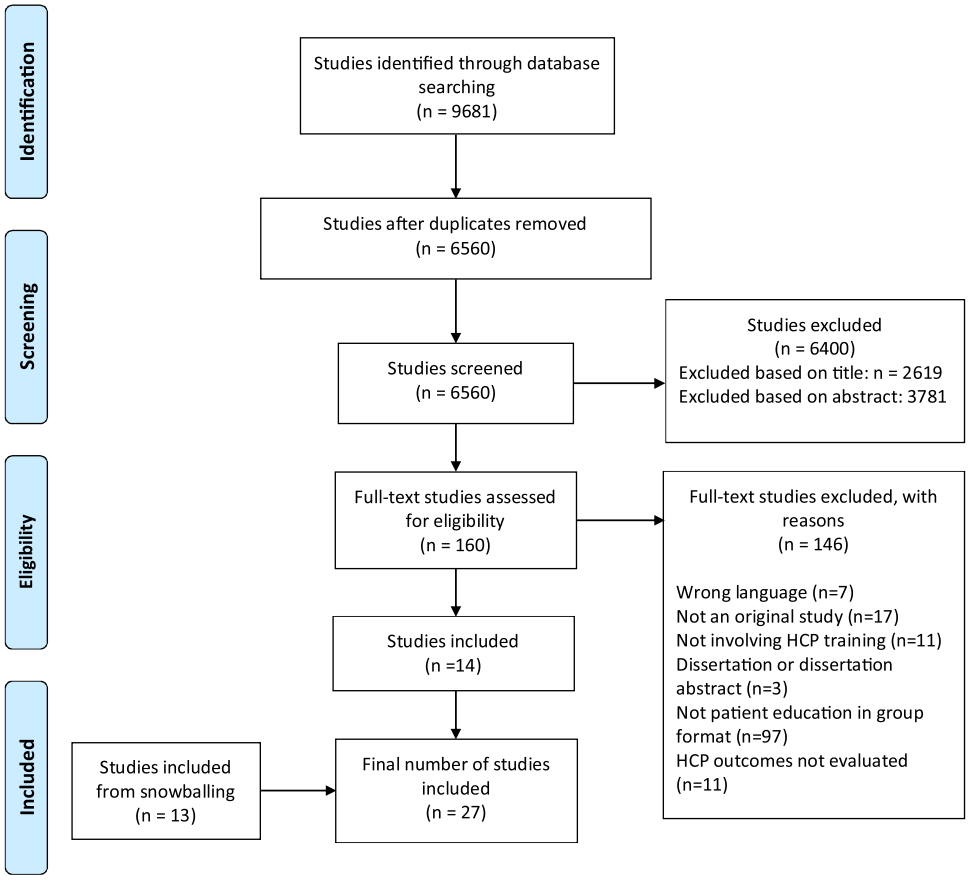

Fig. 1. Search and screening process.

Table 1
Summary of study characteristics.

	Design				Quantitative methods					Qualitative methods				Sample size (n)	Comment
					Questionnaires			Observations							
First author; year; country	Single group	Two groups	Three groups	Random-ization	Pre- and post	Post only	Follow-up	Pre- and post	Post only	Inter-views	Focus groups	Obser-vations	Written replies		
Abdel-All; 2018; Australia [46]					x					x		x		15	
Adolfsson; 2004; Sweden [28]					x						x			16	
Andersen; 2014; Denmark [29]					x					x		x		11	
Brooks; 2012; USA [39]					x	x		x						17	
Brooks; 2013; USA [40]					x	x		x						19	
Burlingame; 2002; USA [45]		x							x					25	19 groups were observed. The control condition did not receive the training
Burlingame; 2007; USA [38]			x		x		x							12	Sub-study 1 (n = 12) compared two conditions and sub-study 2 (n = 11) compared two conditions in the same sample
Christou; 2019; UK [30]					x					x				7	
Cooper; 2019; USA [47]					x								x	82	31 provided qualitative data
Dures; 2019; UK [31]										x	x			14	
Hammond; 2005; UK [41]						x								62	
Hurley; 2019; Ireland [48]					x				x	x				13	5 groups were observed and 5 participated in interviews
Keogh; 2018; Ireland [42]					x				x					13	Observations: n = 8
Keogh; 2018; Ireland [43]					x				x					8	Same sample as in Keogh et al., 2018
Matsuda; 2015; Japan [49]					x						x			40	Group interviews
Parahoo; 2017; Ireland [32]					x					x		x	x	5	A co-author had the role of co-facilitator and was included as participant
Peters; 2019; New Zealand [33]					x					x				6	Interviews both immediately after delivery of the PE groups for the first and 6 months later
Richmond; 2016; UK [54]		x		x	x				x	x				35	Interviews: n = 8
Richmond; 2018; UK [34]					x					x				11	Sub-sample of Richmond et al., 2016
Sanchez; 2017; USA [53]					x							x		4	Observation of case study discussions during training
Sawtell: 2015; UK [50]					x	x				x		x		27–30	Implementation statistics also included. Observations during both training and group delivery. 14 intervention sites
Stenov; 2019; Denmark [60]					x							x		14	Observations of training and group delivery and workshops pre- and posttraining. Action research
Stephen; 2011; Canada [36]					x						x			6	Focus groups and panel discussion.
Torenholt; 2015; Denmark [51]					x	x			x	x		x		432	432 replies to questionnaires. Interviews: n = 18; observations: n = 19 sessions

Tveiten; 2016; Norway [37]	x			23			Elements from action research applied. One of the participants was a member of the research group. Patients were also included: n = 4
Turner; 2014; Australia [44]	x	x		15			Patients (peers) also included: n = 25
Varming; 2018; Denmark [52]	x	x	x	65	x		Replies to questionnaires: n = 65; interviews: n = 11; observations: n = 7 sessions

3.2. Characteristics of the included studies

3.2.1. Publication year and country of origin

The studies were published between 2002 and 2019. Four studies were published until 2009, five in 2010–2014 and 18 in 2015–2019. Six studies originated from the UK, six from USA, four from Ireland, four from Denmark and two from Australia. The others were all from different countries.

3.2.2. Design and sample sizes

Of the 27 studies, ten used qualitative methods [28–37], eight quantitative methods [38–45] and nine mixed methods [46–54]. Characteristics of each study are presented in Table 1. Among those using qualitative methods, 11 applied interviews [29,30,32–34,46,48,50–52,54], three had focus groups [28,37,49], one combined individual interviews and focus groups [31], one used focus groups and panel discussions [36] and one included a workshop [35] and two included written responses [32,47]. Seven included qualitative data from observations of PE following training [29,32,35,46,50–52]. Of the studies using quantitative methods, nine used self-report questionnaires before and after the training [38,42,44,46–49,53,54] and six studies only after training [39–41,50–52]. Six studies used observation to gather quantitative data following training [42,43,45,48,51,54] and two also included observation before training [39,40]. Three studies compared outcomes between two [45,54] or three intervention groups [38]. Two included active control conditions and one a waiting list condition. One study applied randomization [54]. Two studies reported on subsamples of other included studies [34,43]. Two training interventions were explored in more than one study [30,39,40,54]. Four studies included more than 40 participants [41,47,51,52].

3.2.3. Methodological quality

All the qualitative studies were found to be of high methodological quality. The quantitative studies were mostly of high quality but a few omitted relevant information. The quality of the mixed methods studies was varied; several were unclear about methodological aspects related to the qualitative and/or quantitative approach. Quality assessment results are provided in Appendix A in Supplementary material.

3.3. Training intervention characteristics

3.3.1. Theoretical background, components and methods

Training characteristics are summarized in Table 2. Reported theoretical or conceptual frameworks were modeling and observed learning [38,39], learning-by-teaching [39], collaborative learning [48], constructivism [54], adult learning principles [44], motivational strategies plus the stages-of-change model [41], and *The Health Education Juggler* education model [29,35]. Some information on the process of developing the training was included in 18 studies [28,32,35–37,39–41,44–46,48–54], e.g. information on choice of content, pilot testing and persons involved in the development. One study included a patient representative in training development and delivery [37].

The training involved different methods with lectures and group discussions most commonly mentioned. Sixteen studies reported experiential learning with role-play [31–33,37–39,41–43,47–49,51–54] and three experiential learning with patients under supervision [31,36,38]. Thirteen studies reported training in application of different forms of educational tools such as dialogue or reflection prompts [29,32,34,35,39,40,42,46,49,51–54]. Five studies used educational tools as a key feature of the training [29,39,40,51,52]. Also, twelve studies specified a component on group facilitation [31–33,35,37–40,44–46,53]. In eleven studies

Table 2
Summary of training intervention characteristics.

First author; year	Training intervention (aim, background and key content, training methods, duration, trainers)	HCP profession; setting	Patient population; type of PE program
Abdel-All; 2018 [46]	*Aim:* Increase knowledge and skills in identifying and supporting control of hypertension *Background & content:* Condition, healthy lifestyle, goal setting and behavior change, measurement skills, group facilitation *Training methods:* Lectures, group discussions, experiential learning (including role-play), tools (use of pictorially and text based flip charts) *Duration*: 5 days *Trainers*: Research team	Accredited social health workers; community setting in rural India (trial setting)	People with hypertension; education support groups (6 sessions over a 3-month period)
Adolfsson; 2004 [28]	*Aim:* Improve ability to apply empowerment approach in group PE *Background & content:* Empowerment approach, motivation and learning principles, problem solving, goal setting and behavior change *Training methods:* Lectures, experiential learning (video-taped individual counseling) *Duration*: 2 days and 3 half-day follow-up meetings (6 months apart) *Trainers*: Empowerment educator and supervisor	Physicians and nurses; family practice in primary care	People with diabetes; empowerment group education (3–5 sessions and 1 follow-up session)
Andersen; 2014 [29]	*Training aim:* Promote participatory and patient-centered PE by applying 4 different educator roles presented in the education model "The Health Education Juggler": the embracer (takes care of the group), facilitator (generates dialogue and participation), translator (communicates professional knowledge) and initiator (motivates action in patients) *Background & content:* Reflections on challenges related to education roles in own practice, the model, training in use of a toolkit of 24 tools (e.g. cards with picture/statements with the purpose of kick-starting dialogue and enhancing participation) *Training methods:* Lectures, reflections, discussions *Duration*: 1 day *Trainers*: Not clearly reported	HCPs with various educational background; community and hospital settings	People with long term health challenges; group-based PE (number of sessions not specified)
Brooks; 2012 [39]	*Aim:* Improve skills in using a multimedia toolkit (RoadMAP Toolkit) *Background & content:* Condition (substance abuse) and relapse prevention, presentation of a toolkit, group facilitation. The RoadMAP Toolkit consists of video vignettes, posters, worksheets and teaching aids (guide/manual). It is designed to increase use of evidence-based relapse prevention content in groups. It serves as both a mode of information transfer to patients and teaching tool for HCPs *Training methods:* Lectures, toolkit (practicing use of toolkit), manual and handbook, presentation of use of toolkit in one session, *Duration:* 3 h (followed by 2 weeks to familiarize with the toolkit) *Trainers:* Authors	Counselors; community settings	People in outpatient relapse prevention program; group-based relapse prevention (6 modules specified)
Brooks; 2013 [40]	*Aim:* Promote competencies in providing group-based relapse prevention program using a multimedia toolkit (RoadMAP Toolkit – training and toolkit as in [39]))	Counselors in substance abuse relapse prevention; community settings	People with history of substance abuse; group-based relapse prevention (6 modules specified)
Burlingame; 2002 [45]	*Aim:* Increase group skills *Background & content:* Psychoeducation, group facilitation *Training methods:* Lectures, discussions, observations (modeling), experiential learning (assisting an experienced HCP in delivery in practice), experiential learning (role-play), supervision with peers and trainer *Duration:* 1-day workshop, practice and weekly follow-up/supervision for 6 months *Trainers:* Expert on group treatment, psychologists	Social workers, nurses and psychiatric technicians; inpatient psychiatric care	Adolescents and adults with persistent mental illness; psychoeducational groups and activities of daily living skills groups (and also psychotherapy) (number of sessions not specified)
Burlingame; 2007 [38]	*Aim*: Increase knowledge and skills in symptom management and in leading psycho-educational groups *Interventions*: Intervention A: Self-instrumental (manual only) Intervention B: Workshop (including manual) Intervention C: Workshop (including manual) and weekly clinical supervision (included being observed conducting 3 group sessions) *Background & content:* Self-management, group facilitation *Training methods:* Intervention A: Self-instructional, manual Intervention B: Same as in intervention A and lectures, experiential learning (role-play), discussions Intervention C: Same as in intervention B and observations, supervision *Duration:* Intervention A: Suggested studying time 12 h Intervention B: 12 h Intervention C: For 5 months *Trainers*: HCPs with extensive experience in psychiatric nursing and in training HCPs in leading groups	Nurses; Inpatient psychiatric care	People with severe and persistent mental illness; psychoeducational symptom management group treatment (12 sessions)

Table 2 (*Continued*)

First author; year	Training intervention (aim, background and key content, training methods, duration, trainers)	HCP profession; setting	Patient population; type of PE program
Christou; 2019 [30]	*Aim:* Support implementation of a group-based cognitive behavioral intervention Back Skills Training (BeST) *Background & content:* Cognitive behavioral approach. Based on BeST program (content published elsewhere, same as in [34,54] *Training methods:* e-learning (written information, videos, links, knowledge tests) *Duration:*10 h *Trainers:* Content based on BeST, not developed by the authors	Physiotherapists, primary care setting	People with lower back pain; group-based back skills training (6 sessions)
Cooper; 2019 [47]	*Aim:* Promote delivery of problem-solving training *Background & content:* Problem-solving training based on cognitive behavioral approach with emphasis on military culture and tailoring feedback to unique aspects of this population *Training methods:* Lectures, clinical demonstrations, experiential learning, follow-up (weekly group phone calls with an experienced HCP) *Duration*: 2.5 days + 5-month follow-up *Trainers*: Problem-solving therapy experts	Clinical and non-clinical providers of mental health services; health service for members of the Department of Defense	People experiencing distress; group-based psychoeducation with problem-solving training (4 sessions)
Dures; 2019 [31]	*Aim:* Skills in delivering a group-based program *Background & content:* Cognitive behavioral approach, group facilitation *Training methods:* Lectures, manual, experiential learning (role-play and delivery of program to patients in a practice run under observation/ supervision) *Duration:* 4 days *Trainers:* A clinical psychologist and a specialist occupational therapist	Rheumatology nurses and occupational therapists; rheumatology hospital settings (clinical trial setting)	People with rheumatoid arthritis; group-based cognitive behavioral intervention to reduce fatigue (6 sessions and 1 follow-up session)
Hammond; 2005 [41]	*Aim:* Develop skills in delivering a group-based program ("Looking after your joints programme") and to reduce barriers to changing practice *Background & content:* Theoretical basis and research evidence for the PE program, self-management, behavioral approach, stages-of-change model, practicalities of program delivery *Training methods:* Experiential learning (role-play), reflections (motivational strategies used to promote HCPs' readiness to change), discussions (of potential barriers, initial action plans and support networks) *Duration:* 2 days *Trainers:* First author	Occupational therapists; specialist rheumatology setting (mainly)	People with rheumatoid arthritis; group-based behavioral joint protection education (10 h, number of sessions not specified
Hurley; 2019 [48]	*Aim:* Improve competencies in delivery of a group-based program ("Self-management of osteoarthritis and low back pain through activity and skills"; SOLAS) *Background & content:* Overview of program, education content for each week, self-determination theory-based communicaiton strategies, exercises and their mode of delivery, practicalities of program delivery. Based on a face-to-face training program (see [42]) *Training methods:* e-learning (based on a collaborative learning environment and gamification principles) with lectures, peer role modeling, self-reflections (including knowledge assessments), experiential learning with feedback *Duration:* HCPs were encouraged to complete the training over a 4-week period *Trainers:* Trainers within the e-learning program not clearly reported	Physiotherapists; primary care setting	People with osteoarthritis or low back pain; group-based self-management program (6 sessions)
Keogh; 2018 [42]	*Aim:* Improve competencies in delivery of a group-based program (SOLAS) *Background & content:* Training in the content and delivery of SOLAS, training in 9 self-determination theory based communication strategies (e.g. offer meaningful rationale for the behavior, provide opportunity for input and choice to patients; use support and encouragement rather than pressurizing behavior; collaborative goal setting, action planning and problem solving; provide positive, information-rich feedback) *Training methods:* Lectures, discussions, reflections, experiential learning with role-play, protocol *Duration*: 2 days *Trainers:* Not reported	Physical therapists; primary care (clinical trial setting)	People with osteoarthritis or low back pain; group-based self-management intervention (6 sessions)
Keogh; 2018 [43]	*Aim:* Improve competencies in delivery of a group-based program (SOLAS). Specified further than in [42] as training in educational content delivery of 17 behavioral change techniques and use of communication style based on self-determination theory	Physical therapists; primary care (clinical trial setting)	People with osteoarthritis or low back pain; group-based self-management intervention (6 sessions)
Matsuda; 2015 [49]	*Aim:* Increase competencies in providing psychoeducation *Background & content:* Fundamentals of psychoeducation, knowledge of illness and treatment, nursing theory, communication skills, skills required to provide psychoeducation (positive feedback, reframing, coping questions, dry run, modelling) *Training methods:* Lectures, textbook, audiovisual aids (DVD with simulated practice), experiential learning with role-play *Duration*: 2 days *Trainers:* Not clearly reported	Nurses; psychiatric hospitals	People with schizophrenia; group-based psychoeducation (4 sessions)

Table 2 (*Continued*)

First author; year	Training intervention (aim, background and key content, training methods, duration, trainers)	HCP profession; setting	Patient population; type of PE program
Parahoo; 2017 [32]	*Aim:* Competence in providing group PE *Background & content:* Intervention protocol, condition and treatment, group facilitation *Training methods:* Lectures, problem-solving, discussions, experiential learning with role-play, protocol, educational tools (information sheets to trigger group discussion) *Duration:* 5 days *Trainers:* Expert who worked on a similar project in the US	Counsellors (professional background not specified); national cancer charity (clinical trial setting)	Men with prostate cancer and their partners; psychosocial intervention (3 group sessions and 2 individual telephone sessions)
Peters; 2019 [33]	*Aim:* Promote competencies in program delivery *Background & content:* Self-management, behavior change, group facilitation *Training methods:* Lectures, experiential learning (role-play) *Duration*: 2 days *Trainers*: A health professional who had been involved in development of the program	Occupational therapists and physiotherapists; community health services	Persons with multiple sclerosis; group-based fatigue self-management program (6-week program)
Richmond; 2016 [54]	*Aim:* Dissemination of Back Skills Training program (BeST) materials and provide training in a cognitive behavioral approach *Background & content:* Cognitive behavioral approach, manual about how to deliver a group-based program (content not described in detail but referred to previous work) *Training methods:* Intervention A and B: Manual, session narratives, crib sheets, patient workbook, additional information sources Intervention A (e-learning): Self-directed reading, reflective practice, skill rehearsal, multiple-choice questions, formative tests with feedback, interactive excercises, discussion forum, multimedia Intervention B (workshop): Lectures, videos, experiential learning with role-play, discussions, website where additional paperwork could be downloaded *Duration:* Intervention A: 10 h (online) within 6 weeks Intervention B: 2 days *Trainers:* Not clearly reported	Physiotherapists; National Health Service departments	People with non-specific low back pain; group-based back skills training program (6 group sessions and 1 individual session)
Richmond; 2018 [34]	Same as intervention A in [54]	Same as intervention A in [54]	Same as intervention A in [54]
Sanchez; 2017 [53]	*Aim*: Develop knowledge and skills in facilitating the groups *Background & content:* Condition, self-management, group facilitation *Training methods:* Lectures, videos, group discussions, experiential learning with role-play *Duration*: 24 h (> 6 weeks) *Trainers*: Audiology graduate students supervised by audiology faculty	Community health workers (nonclinical); federally qualified health center in an underserved area in a US-Mexico border city	People with hearing loss; group-based self-management support; (number of sessions not specified)
Sawtell; 2015 [50]	*Background & content:* Based on motivational interviewing and solution-focused brief therapy *Training methods:* Manual, other methods not described in this publication *Duration*: 2 days *Trainers:* A diabetes specialist nurse and a psychologist (who developed the program)	HCPs (mainly pediatric diabetes specialist nurses and dietitians); pediatric diabetes clinics (clinical trial setting)	Children and adolescents with diabetes and their families; the Child and Adolescent Structured Competencies Approach to Diabetes Education (CASCADE) (4 sessions)
Stenov; 2019 [35]	*Aim:* Develop new approaches towards addressing biopsychosocial issues and facilitating group processes *Background & content:* The model "Health Education Juggler", motivational interviewing in groups, person-centered communication, readiness assessment, goal setting and problem solving, emotional-behavioral strategies, group facilitation The term workshop was used to emphasize user-driven and collaborative research approach *Training methods*: Lectures, reflections, discussions, case scenarios, dialogue tools, videos *Duration*: Two 3 h workshops *Trainers*: The research group	Nurses, physiotherapists, dieticians, occupational therapist; hospital and municipalities	People with diabetes; group-based person-centered self-management education (number of sessions not specified)
Stephen; 2011 [36]	*Aim:* Skills in facilitating online support groups *Background & content:* Therapeutic model of The Wellness Community (a US non-profit organization) aiming to encourage patients to become empowered to make active choice in their recovery *Training methods:* Lectures, experiential learning (co-facilitation; i.e. delivery of support group with an expert), supervision (weekly online peer meetings) *Duration*: 35 h (> 10 weeks) *Trainers:* Trainer from The Wellness Community	Psychosocial oncology counsellors; cancer centers	People with cancer; online support groups (number of sessions not specified)
Torenholt; 2015 [51]	*Aim:* Use of education toolkit *Background & content:* Introduction of a toolkit including 24 tools categorized into four themes: 1) Reflection and experience; 2) Motivation and goals; 3) Knowledge and learning; 4) Body and senses. The toolkit included descriptions of each tool, practical information and advisory instructions for use. The tools applied three elements as mechanisms of action: use of photos; use of patient quotes and patient statements; and use of game elements	Nurses, physiotherapists, dieticians, occupational therapists, other; municipality (92%); hospital (6%) and patient organization (2%)	People with chronic illness; group-based self-management education (number of sessions not specified)

Table 2 (*Continued*)

First author; year	Training intervention (aim, background and key content, training methods, duration, trainers)	HCP profession; setting	Patient population; type of PE program
	Training methods: Lectures, experiential learning (training in how to apply the toolkit) *Duration*: 1 day *Trainers*: Not reported		
Tveiten; 2016 [37]	*Aim:* Develop skills in individual and group-based PE *Background & content:* Health pedagogy, empowerment, communication, behavior change counseling, group facilitation, involvement of patient representatives *Training methods:* Lectures, self-reflections, sharing of experiences, experiential learning (exercises and role-play) *Duration*: 5 days (in an 8-week period) *Trainers:* Multidisciplinary team with 8 professionals and 1 person with extensive illness experience	HCPs with different backgrounds (nurses, physiotherapists, occupational therapist, social workers) and people with illness experience; municipality and hospitals	Patient group not specified; PE (number of sessions not specified)
Turner; 2014 [44]	*Aim:* Support delivery of the program Skills to Enable People and communities (STEPS) using a peer-professional partnership model *Background & content:* Condition, overview of program, communication, psychological adjustment, changes in families, leader standards, policies and procedures, group facilitation *Training methods:* Lectures, interactive workshop, networking activity (also available following training) *Duration:* 2 days *Trainers*: STEPS program staff and other HCPs from Acquired Brain Injury Outreach service	HCPs with unspecified background and individuals with illness experience and their family members; community rehabilitation	People with acquired brain injury and their family; group-based program (6-week program)
Varming; 2018 [52]	*Aim*: Skills in use of a dialogue toolkit targeting self-management of chronic illness in difficult-to-reach people *Background & content:* 9 patient dialogue tools (My Day, Check-in, Our Rules, My Immediate World, My Contact with Healthcare Professionals, Fact or Fiction, Where Am I, We're on the Way, Check-out) *Training methods:* Lectures, experiential learning (training in using the tools), guidebook *Duration:* 1 day and half a day of follow-up (after 6 weeks) *Trainers*: Professional educators from a university college	HCPs with different educational background (e.g. nurses, physiotherapists and dieticians); referral to program from primary care	People with chronic illness and low socioeconomic status; group-based self-management education

the training material included manuals or protocols [31,32,34,38,38,39,40,42,43,50,52,54]. Four studies explored e-learning [30,34,48,54].

Training interventions had different aims. Most trainings provided some information on PE framework such as cognitive behavioral approach, psychoeducation, empowerment, self-determination theory or person-centeredness. Most interventions included components about conditions, self-management and/or goal setting and behavior change. Four studies [32,34,37,54] explored interventions aiming to improve HCPs' skills in both group-based and individual PE.

3.3.2. Training duration and follow-up

Training lasted between three hours and five days, with two days being most common. Excluding follow-up time, seven interventions lasted from three hours to one day (eight hours) [29,35,36,39,40,45,51,52], nine lasted one to two days [28,33,34,38,41–44,49,50,54], two lasted two to three days [47,53], one lasted four days [31] and three lasted five days [32,37,46]. Five studies involved self-paced interventions [30,34,38,48,54]. Six interventions included follow-up lasting six weeks [52], ten weeks [36], five months [38,47], six months [45] or 18 months [28].

3.3.3. Target group and setting

The studies included different HCP populations. Thirteen comprised interprofessional training, of which two also included people with chronic illness experience [37,44]. Amongst single-profession interventions, six involved physiotherapists [30,34,42,43,48,54] and two concerned nurses [38,49]. HCPs were recruited from various settings, mostly outpatient settings. Three studies targeted inpatient psychiatric settings [38,45,49]. The HCPs were generally experienced professionals. However, 14 of the studies did not specify prior group-based training or work experience. Among studies providing such information, nine reported little or no experience. Only two studies reported high level of prior experience or training in group-based PE [36,48].

Nine studies focused on facilitating HCPs' skills in PE for adults, one for adolescents and children [50] and another for both adults and adolescents [45]. Target age group was not specified in the other studies. Most training aimed at improving competencies in PE for people with a specific condition. Six programs were designed for people with chronic pain and/or rheumatic illness [31,34,42,43,48,54], three targeted people with diabetes [28,35,50] and two were for people with cancer [32,36]. Four trainings involved generic PE [29,37,51,52].

3.4. Training impact and outcome measures

3.4.1. Reactions to training

The results of the studies are presented in Table 3. Fifteen studies reported on reactions to the training with study-specific measures or interviews [30,31,33,35–37,41,42,44,46–48,50,52,54]. All reported some positive reactions by the HCPs. High satisfaction with the training in general was reported in eight studies [33,36,42,44,46,48,50,54]. In several studies, HCPs emphasized the importance of practicing skills and feedback [31,33,36,48]. Experiential learning was described as necessary and exciting yet simultaneously uncomfortable and even "daunting" [31]. The flexibility and long-term accessibility of e-learning training was appreciated [30,34] but the lack of interactivity and skill practice was perceived as a challenge [30,54]. The one study comparing e-learning with workshop training found high satisfaction with both training formats but higher among workshop participants [54]. In another study the HCPs appreciated the opportunity to reflect, learn and share experiences with colleagues and patient

Table 3
Summary of study results.

First author; year	Reactions	Learning	Behavior	Experiences
Abdel-All; 2018 [46]	Training material was found easy to understand and useful.	Knowledge of hypertension improved from baseline (64%) to post-training (76%), and further at the 3-month follow-up (after delivery) (84%) However, only one of three settings showed significant improvement.	Self-management support was delivered effectively based on observation.	
Adolfsson; 2004 [28]				The main results showed a conflict in roles. The HCPs knew their role in the traditional educational approach but not the empowerment approach, which they needed to grow into. At the same time as they started a new way of working, their role had changed from being an expert to being a facilitator. As experts they felt secure; as facilitators they needed support. *Experience & behavior reported together:* HCPs found it difficult to include disease-specific knowledge when working with a flexible patient-centered approach. They tended to stay in the role they found most comfortable during education sessions (most often that of embracer), rather than adopting new and more challenging PE roles. The HCPs theoretically understood the role of facilitator, but they did not know how to perform in this role in practice. The ability to juggle all educator roles depended on the ability to master each. In general facilitation of group dialogue was seen as a huge challenge. The model was a helpful tool in terms of improving educator awareness of more or less successful performance.
Andersen; 2014 [29]				
Brooks; 2012 [39]		Majority (82%) agreed on feeling more confident in leading groups after using the toolkit.	Improvement in content adherence on "coping with craving" and "drug refusal skills". HCPs skillfulness, already in the adequate-to-average range at baseline, did not change. Self-reported use of educational/teaching aids increased from use in 71% of group to 91% following training.	Experience of delivery/using tool: High levels of satisfaction with the toolkit run groups and satisfaction with curriculum's ease of use. Majority (94%) agreed that the toolkit helped them conduct better groups. All felt the toolkit helped them lead successful groups and that it met their needs when leading groups. About a third (30%) agreed on needing to spend a lot of time learning the toolkit material before using it effectively in groups.
Brooks; 2013 [40]			Moderate or large baseline to post-training effect sizes for HCPs' adherence to toolkit content were identified for 13 of 21 targeted behaviors with the largest gains on items measuring active skill practice. Post-training adherence gains were largely maintained at the 6-month follow-up. There were no significant differences in post-training or follow-up adherence on modules which received direct training versus modules which HCPs self-taught. No improvements in competence.	
Burlingame; 2002 [45]			Improved group interaction in the adult sample, no difference between groups in the adolescent sample.	

Burlingame; 2007 [38]		Limited support for the superiority of the workshop compared to manual only. No difference between workshop only and workshop with supervision. Improvements in knowledge of running groups was not maintained at a 5-month follow-up.		
Christou; 2019 [30]				*Reactions and experiences* Four main themes: 1) Flexibility but lack of interactivity 2) Cognitive behavioral approach is a new way of working 3) Facilitating group work after i-BeST training 4) The need for managerial support The flexibility of the training was perceived as a major advantage. However, lack of interactivity was identified by most HCPs as the biggest challenge. HCPs found the online training to be acceptable for attaining knowledge but not adequate for developing skills. HCPs reported applying key principles of the cognitive behavioral approach within routine practice, but were reluctant to refer into the group-based PE. Coordination of implementation of the group PE throughout a large trust was perceived as necessary, including sufficient staff training for all HCPs. Most responses to a question about important factors in sustaining problem-solving training cited the availability of referrals or ease of patient recruitment and support from leadership and other staff members. *Reactions and experiences reported together:* 1) "Exciting but daunting" reflected the mixture of excitement and anxiety in training and delivery 2) "Skills practice and demonstrations were essential" captured the value of learning and practicing together, even though the process could be uncomfortable. Feedback was found invaluable 3) "An individual approach to a standardized intervention" showed how tutors negotiated adherence to the manual with delivery using their own words 4) "Becoming a better practitioner" described how training enhanced wider clinical practice 5) "Pragmatic and flexible" highlighted practical adaptations to facilitate training and intervention roll out.
Cooper; 2019 [47]	71% intended to conduct more PE groups in the future, 13% were unsure and 3% reported not intending to (13% without a reply).	Increased self-efficacy in skills required for delivering problem-solving training.		
Dures; 2019 [31]				
Hammond; 2005 [41]	87% stated that the training had influenced their delivery of group programs "in some way".		*Behavior (self-reported):* 53% had integrated some of the PE approaches into their multidisciplinary group arthritis education programs. Of the 48 respondents, 45 subsequently changed individual PE practice, 13 implemented the group program, 25 contemplated doing so and 10 did not. The barriers to change were limited staffing, access to facilities, time to make practice changes, funding for program costs and clinical time to deliver the program.	
Hurley; 2019 [48]	HCPs were very satisfied with the training and completed it within 3–4 weeks (mean hours spent 9.1, SD 3.3). The most commonly cited positive	Improvement in confidence and knowledge of all components of the group PE.	*Behavior (self-reported and observations):* The fidelity scores were high, based on self-report, for content delivery. The program was delivered in	

Table 3 (*Continued*)

First author; year	Reactions	Learning	Behavior	Experiences
	features of the training were the range of brief video clips and focus on communication skills and client motivation.		a "needs supportive manner", based on observation.	
Keogh; 2018 [42]	The HCPs were very satisfied with the training.	The confidence in self-determination theory-based communication strategies and knowledge of some intervention content components significantly improved.	HCPs delivered the program in a "needs-supportive manner". However, goal setting was delivered below acceptable levels by all HCPs.	
Keogh; 2018 [43]			*Behavior:* The HCPs delivered a mean 20.5 behavioral change techniques per class (range 64.9–72.4% of 31 techniques). Of these, 17 techniques were fully delivered in each class representing moderate fidelity to the protocol (53.5–59.3%). A further 3.5 techniques were partially delivered. Techniques associated with "goals and planning" were often poorly delivered.	
Matsuda; 2015 [49]		Increase in knowledge, self-efficacy and attitude, but not in skills Knowledge was gained through better understanding of basics (e.g. "understanding of basics of how to respond"), self-efficacy was expressed with some uncertainty (e.g. "I worry whether I can do it well") and motivation to improve skills was described (e.g. "I want to improve my nursing").		
Parahoo; 2017 [32]				*Behavior and experience reported together:* Themes: 1) Difficulties to keep to the structure of the intervention 2) Selective coverage of topics 3) Partner participation 4) Overall impression of the group and telephone session 5) Perceived benefits to participants Issues such as not keeping to the aim of the intervention, deviating from the content and/or reluctance in discussing sensitive issues such as sexual health were reported. The co-facilitator reported that the extent to which the HCPs followed the protocol varied greatly. Difficulties in implementing the behavioral components such as meeting behavioral targets and achieving them.
Peters; 2019 [33]	HCPs described that they had found the training especially inspiring because it incorporated non-didactic learning approach and discussion opportunity between HCPs with different backgrounds. HCPs suggested that future training should add advice and practice around how to better manage group dynamics.			Two themes: 1) "Reciprocity" showed how the HCPs were trained to deliver the program, then reciprocated in the program delivery as active participants, which then provided feeling of personal reward and expansion of their usual practice; 2) "Enhancements", encompassed suggested directions for future training and deliveries of the program.
Richmond; 2016 [54]	Interviews highlighted that while initially skeptical, HCPs found the online training acceptable. A number of strategies were identified to enhance future versions of the e-learning program such as including more skills practice. The workshop training received higher satisfaction	Similar scores on knowledge and self-efficacy to deliver the majority of the program. The workshop group showed greater reduction in biomedical attitudes to low back pain management.	Clinical skills were similar between the intervention groups. 34% of the HCPs delivered the program in their practice (no difference between training modes).	

	ratings than the e-learning training. The majority of the e-learning users were "satisfied" and the majority of workshop participants were "very satisfied".		
Richmond; 2018 [34]			Three themes: 1) Anxieties about using a cognitive behavioral approach. It is different (using an exploratory questioning approach, using a facilitative therapeutic style, the contrast in content to their usual practice); it is not what patients expect; anxiety could be reduced 2) Experiences of implementing a cognitive behavioral approach. Difficulty identifying the right patients; surprisingly positive outcomes 3) Sustainability for future implementation of a cognitive behavioral approach. It is needed; Change is needed for it to happen.
Sanchez; 2017 [53]		Increased knowledge, confidence and skills in facilitating hearing education and peer-support groups.	
Sawtell; 2015 [50]	Most HCPs thought the training was very good, motivating and comprehensive.		*Experience and behavior reported together:* HCPs found organizing the groups burdensome in terms of arranging suitable dates/times and satisfactory group composition. Some HCPs also reported difficulties in mastering the psychological techniques. Oservations and HCPs feedback indicated that the HCPs generally delivered activities as described in the manual. However, less time than was recommended was spent on some key exercises due to HCPs finding them difficult to deliver and/or not well received by groups. Also, while observations and HCPs feedback showed that fidelity of psychological techniques was good across sessions in half the sites, it was not optimal in the remainder. Difficulties in delivering the intervention particularly occurred when sessions had groups with members with a wide age range or few group members. Only 68% of possible groups were run.
Stenov; 2019 [60]	*Reactions (based on observation)* HCPs were very engaged in the training and considered themselves highly ready to change and agreed with the theoretical principle related to facilitating group-based, person-centered diabetes self-management education.		*Experiences and behavior:* Three themes: 1) Increased awareness but implementation challenges remain (Some HCPs chose not to implement the methods because they conflicted with their practice relying on the biomedical model) 2) Readiness to change but unable to facilitate and create clearness (Other incorporated some approaches but was unable to structure the process, leaving patients uncertain about the aim) 3) Content and process tailored to the needs of group participants (One setting succeeded with implementation, tailoring content and process to patients' needs)
Stephen; 2011 [36]			*Reactions and experiences reported together:* Three themes: 1) Immersion in experiential learning 2) Perceptions of clinical value and benefit

Table 3 (*Continued*)

First author; year	Reactions	Learning	Behavior	Experiences
				3) Overcoming challenges with adapted skills Counsellors described components of their experiential learning: co-facilitating online cancer support groups with an expert, debriefing online, and participating in an online peer supervision group, as critical to their becoming engaged. Despite initial challenges, the counsellors learned new skills, and adapted known clinical skills, to the text-only environment.
Torenholt; 2015 [51]				*Experiences and behavior reported together:* When HCPs rated the tools on a 1–10 scale (10 = optimal score) the mean score was 7.9 (SD = 1.1). HCPs emphasized the applicability of the toolkit, and between 69% and 82% reported that the toolkit supported them in facilitating person-centered education and active involvement to a high or very high degree. Most (81%) reported that they would like to apply the toolkit again in future education to a high or very high degree. A quarter of the HCPs found it challenging to both focus on all participants and simultaneously support individuals. Five categories of educator experiences were identified: interaction and activity; person-centeredness; group dynamics and synergy; openness; and light and cheerful atmosphere. HCPs talked significantly less in situations where the toolkit was applied.
Tveiten; 2016 [37]				*Reactions and experiences reported together:* Three themes 1) Anticipation and interaction between theory and practice (adequate and motivating information about the training beforehand; organization and delivery allows for reflection and sharing of experience; variations and correlations between theoretical part of the training and own clinical practice; relevant themes) 2) Interdisciplinarity and patients' voice with meta-perspective (interdisciplinarity and patient involvement; qualified patient representatives and emphasis on the user) 3) Awareness and appreciation of the abilities that contribute to change in practice (increased understanding and awareness and improved skills; changes in own practice).
Turner; 2014 [44]	Satisfaction with the training was rated high (mean 9.3 of maximum score of 10).	Improvement in self-efficacy.		
Varming; 2018 [52]	Most HCPs were satisfied with the training content and delivery. They highlighted the importance of practicing the new approach and tools before applying them in practice. Some felt that there was too little time to practice and discuss the approach during the training. Some would have preferred all nine tools to be introduced and practiced.			*Experiences and behavior reported together:* HCPs had a positive response to the approach and found that the tools supported involving participants in education and support. The tools provided time for reflection in the PE that benefited patients and HCPs alike. HCPs found it challenging to allow patients to help set the agenda and to exchange experiences without educator control.

Table 4
Learning outcomes and outcome measures in quantitative or mixed methods studies.

Outcome	Outcome measure	Studies applying the measure
Knowledge about condition	Knowledge of Illness and Drugs Inventory	Matsuda & Kono, 2015 [49]
Self-efficacy	General Self-Efficacy Scale	Turner et al., 2014; Matsuda & Kono, 2015 [44,49]
Attitudes	● Evidence-Based Practice Attitude Scale	Matsuda & Kono, 2015 [49]
	● Work Motivation Scale for Nurses	Matsuda & Kono, 2015 [49]
	● Pain Attitudes and Beliefs Scale for Physiotherapists	Richmond et al., 2016 [54]
Self-esteem	Rosenberg Self-Esteem Scale	Turner et al., 2014 [44]

representatives [37]. In one study HCPs appreciated that the training mirrored the teaching methods they were learning and would be applying in the PE programs [33]. Similarly, in another study HCPs showed engagement in self-assessing strengths and areas in need of professional development, mirroring the person-centered PE approach they were being trained in [35].

Suggestions for improvements included: more training in group facilitation; observations of PE being delivered by experienced HCPs; clinical supervision; mentoring; reduced time between training and offering PE; disease-specific training; training within clinic time; and involvement of the wider clinical team [31,33,50].

3.4.2. Learning outcomes

Ten studies reported on learning outcomes. All applied quantitative methods [38,39,42,44,46–49,53,54]; one also used interviews [49] and another included observations during training [53]. Most used study-specific outcome measures or modified versions of validated instruments. Overview of the reported validated instruments is provided in Table 4. Psychometric qualities were mentioned in four studies [38,42,49,54].

Based on within-group changes, improvements in self-efficacy or confidence were identified in six studies [42,44,47–49,53] and knowledge in five [42,46,48,49,53]. In one study, HCPs reported feeling more confident in group-based PE post-training [39]. Two studies included follow-up evaluations, at three and five months, respectively. One found maintained effects on learning [46]; the other did not [38].

When comparing improvement in knowledge between training formats, limited support was found for workshop being superior to manual only. No differences were detected between workshop only and workshop with supervision [45]. Similar results were reported on knowledge and self-efficacy between e-learning and workshop groups [54]. Improvement in skills based on observation during training was reported in one study [53] and no improvement in skills was documented in another [49].

3.4.3. Behavior outcomes

Healthcare providers' skills in practice were evaluated with observations in 14 studies [29,32,35,39,40,42,43,45,46,48,50–52,54]. Seven used quantitative methods [39,40,42,43,45,51,54] of which most used study-specific measures or adapted versions of validated measures. Two studies mentioned psychometric properties [42,54]. Applied validated measures are shown in Table 5.

Two studies showed improvement in adherence to content [39] or behavior change techniques [40], with maintained improvement at six-month follow-up [40]. Neither study found improvement in skills but the HCPs were at an adequate-to-average level at baseline [39,40]. Two studies reported HCPs being able to deliver the PE in a person-centered way reflecting skills in communication [42,48]. Another study showed moderate fidelity to a protocol [43]. Goal setting support skills were categorized as suboptimal for one sample of HCPs in two studies [42,43]. A study comparing e-learning with workshop training, found no between-group differences in skills [54]. One study showed that HCPs talked less in groups where an educational toolkit was applied [51]. Limited support was found for improved group facilitation skills in PE for adults (but not adolescents) when comparing trained versus untrained HCPs [45].

Seven studies applied qualitative methods during observations [29,32,35,46,48,50–52]. One reported on observation separately and concluded that PE was delivered effectively [46]. The six other studies combined observational data with interview data when presenting the results. In one, implementation success varied between HCPs and/or settings, ranging from successfully adapting to the new approach, to finding it incompatible with current practice [35]. Another study found that although HCPs generally followed a manual, they delivered some types of PE, e.g. psychological support, suboptimally [50] and one found HCPs struggling to shift from providing an empathic environment to promoting active group participation and behavior change [29].

Two studies reported implementation statistics following training. In one study where 34% of the HCPs delivered a group program following the training, no difference was found between HCPs trained via e-learning or workshop [54]. In another study, part of a clinical trial, only 68% of possible PE groups were run [50].

3.4.4. Results on patient outcomes

Three studies reported on patient outcomes [38,45,47]. One study in an adolescent sample showed no difference between a training intervention group and a control condition without training. However, in the same study, adults whose HCPs had received training showed greater improvement in symptoms of anxiety and depression [45]. Another study showed no difference on patient outcomes between different training formats [38]. In a study with a single-group design, improvements were found on all patient outcomes (e.g. distress and coping) [47]. Six studies were part of larger trials and patient outcomes may be published elsewhere [31,32,42,43,46,50].

3.4.5. HCPs' experiences of offering PE in groups

Post-training experiences of group-based PE were reported in 14 studies [28–37,47,50–52] where six studies combined results on observations and experiences [29,32,35,50–52]. Results and themes for each study are summarized in Table 3. Analysis

Table 5
Behavior outcomes and outcome measures in quantitative or mixed methods studies.

Outcome	Outcome measures	Studies applying the measure
Fidelity to content and communication strategies	The Health Care Climate Questionnaire	Keogh et al., 2018; Hurley et al., 2019 [43,48]
Skills in delivery of a cognitive behavioral group intervention	Cognitive Therapy Scale – Revised-Pain	Richmond et al., 2016 [54]
Skills in group facilitation	The Hill Interaction Matrix-G	Burlingame et al., 2002 [45]

revealed the following general themes: benefits of training interventions; barriers to implementation; and delivery support.

3.4.5.1. Benefits of training interventions. In several studies HCPs described gains in confidence and skills after putting time and effort into preparation and practice. Some studies described how HCPs experienced the training and delivery of groups as making them better practitioners, not only when working with groups but also in their wider clinical practice [30,31,33]. They described becoming better at supporting self-management, communicating and looking at the patient holistically [30,31,33,37].

> *Participants recounted how, in their training for this program, they had learnt through modeling and practice, to build an inclusive atmosphere that would allow program attendees to feel acknowledged as individuals with their own rich and personal experiences, and therefore expertise* [33, p. 2794].

Acquired skills in group facilitation were described in three studies [33,35,36]. In one, HCPs described having learned to step back and allow patients to help one another identify useful knowledge and self-management strategies [33]. Another study described using open-ended questions to facilitate reflection and allow group discussion where patients could share experiences, needs and concerns. This involved mastering group and individual level interventions simultaneously by making space for self-reflection and group discussions [35]. Experienced HCPs trained in delivering online PE described adapting group facilitation skills to the online written format [36]. Several studies described how the HCPs felt rewarded by seeing the positive changes in group participants [33,34,36].

3.4.5.2. Barriers to implementation. Healthcare providers identified several barriers when implementing group-based PE. A major barrier was HCPs' lack of experience and skills in the new role. The group format was often experienced as highly different from the PE in their daily practice. HCPs described being more accustomed to providing advice and recommendations than using a communication style that promoted person-centeredness and empowerment [28,29,32,33,35,51] or a cognitive behavioral approach [31,34]. Some struggled to adapt their usual educational style to the new approach, finding it easy to fall back into the traditional approach, for example reverting to counselling mode or using PowerPoint presentations without much patient engagement [28,29].

In some studies HCPs reported that the patient-centered approach was also new to the patients and not necessarily what the patients expected and wanted [28,34,52]. Although many HCPs were highly motivated and theoretically well informed prior to implementation [28,29,31,35] some were also ambivalent about allowing patients to "take the center stage" [52]. As described in one study:

> *The intervention required a way of working which was "completely unfamiliar territory"* [31, p. 3].

Specifically, challenges with group facilitation were described in various studies [28–30,35]. Facilitating group dialogue was seen as a huge challenge, causing nervousness and even being "terrifying" due to lack of confidence and skills [30]. Difficulties with delivering sections on goal setting were also evident [28,29,32,35]. Other difficulties included maintaining the structure of the PE [32,35], conveying disease-specific knowledge using newly learned communication skills [28,29] and mastering psychological strategies [50].

3.4.5.3. Delivery support. The third theme concerns factors that support the delivery of group-based PE. The HCPs described how nervousness could be reduced and skills improved with practice and preparation. Access to online training material and manuals was perceived as helpful and so was working in pairs with another group facilitator [31,32,52].

In the two studies exploring experiences of using educational dialogue tools, the HCPs report mostly positive experiences even though the tools did not fit within all planned group sessions [51,52]. The tools were found to promote positive group dynamics, as described in the following excerpt:

> *In response to open-ended questions, educators reported that the tools created room for participants to tell their stories, which enabled other participants to comment and elaborate, and that the tools ensured that the participants' perspective formed a clear starting point* [51, p. 528].

A need for continuous support and supervision was described including more support from trainers during delivery, peer collaboration, feedback on performance and clinical supervision [28–30,33,34,47,52]. Time for administrative work and preparation was also reported as important for implemenation [34,47,50,52].

4. Discussion and conclusion

4.1. Discussion

This scoping review identified 27 studies on training for HCPs offering group-based PE published between 2002 and 2019. The results show a research field expanding in terms of both publication numbers and methodological approaches. HCPs' reactions to the training are generally positive. This is vital to ensuring HCPs' engagement, though the correlations between reactions to training interventions and skill-building may not be strong [55]. Several studies indicated positive short-term effects on learning outcomes, such as self-efficacy and knowledge. Findings on observed skills were mixed and the three studies that reported patient outcomes were inconclusive. Study-specific outcome measures were used in most studies; only a few used validated instruments and information on psychometric properties was generally lacking. Notably, only one validated self-report instrument on learning outcomes was used in more than one study. Use of validated instruments that specifically address self-efficacy in PE might be considered, such as the "Self-Efficacy and Performance in Self-Management Support" instrument [56].

The results on training efficacy should be interpreted with caution since a single group design was most common; only three studies included a control condition [38,45,54]; thereof one with randomization [54]. Only two studies included follow-up measures [38,46]. These results indicate a field still to mature. More research including longitudinal efficacy design and behavioral outcomes is clearly needed on training in both group-focused and individual PE [19].

Clear descriptions of interventions are essential to allow replication and comparison between studies [57,58]. Improved quality in descriptions of training for HCPs has been called for and criteria for describing development and evaluation of such training (CRe-DEPTH) have recently been suggested [57]. Available guidelines on reporting educational interventions to enhance HCPs' competencies are often content- and didactic method-specific [57]. CRe-DEPTH criteria are, however, broadly applicable, being generic in character while preserving flexibility to integrate different content and didactic methods. Although the majority of the studies included in this review reported on most of the items in CRe-DEPTH, the amount of detail provided varied considerably.

Information on the theory underlying PE was usually given (frequently a person-based or cognitive behavioral approach) but the amount of detail varied substantially. Like all complex interventions, training in PE should be based on a clear theoretical framework [19,58]. The theoretical framework for the training itself was often not explicitly stated but the variety of training methods suggest use of different learning theories. The most frequently mentioned training methods were lectures, experiential learning with role-play, discussions, educational tools and manuals. Tailoring of the training was indicated by the use of methods such as discussions and experiential learning with feedback: most of the interventions included discussions and over half included some level of experiential training. This is promising, as tailoring is important for effectiveness [58], and practice with feedback has proven essential in teaching HCPs how to support their patients' self-management [19]. Training duration varied from three hours to five days. Only a minority [28,36,38,45,47,52] of the training interventions included follow-up. Thus, an essential training component was commonly lacking, as prolonged training has been identified as important in communication training for HCPs in general [59] and for competencies in PE [19]. Few trainings included clinical supervision [31,36,38], which provides an essential learning opportunity supporting implementation of skills into clinical practice [19,59]. This echos our qualitative findings concerning the HCP's perceived need for continuous post-training supervision and support [28–30,33,34,47,52].

A component on group facilitation training was commonly not specified. However, since experiential training and training in use of educational tools may have provided training in group facilitation this can be viewed as included in majority of the studies. In the remaining studies, lack of detailed training descriptions might explain this, but it could also indicate a lack of attention to group facilitation in some of the trainings. The latter could explain why HCPs described challenges and perceived a lack of skills related to facilitating groups. Such skills are essential to be able to promote person-centeredness, empower group members to see themselves as experts and share their experience with others, and prevent the passive role of student often seen in traditional didactic teaching [16,28,60]. It has even been indicated that the group process during PE might be more important for patient outcomes than the content of the PE program [61]. Despite decades-long agreement on person-centeredness and empowerment as vital in PE, HCPs still struggle with this approach [62], not least when working with groups [16,28,60]. This is also evident in our results from the qualitative studies on post-training experiences. Healthcare providers described having acquired important skills which improved their practice but also described challenges with taking on a different role as an educator, adapting to a person-centered communication style and group facilitation. This accords with a previous review concluding that change in clinical practice is not an automatic outcome of PE training and that proactively addressing contextual barriers may be necessary to support implementation [20].

Several studies that included training in use of educational tools such as dialogue prompts to promote active participation suggest that such tools may be useful. Our findings indicate potential for improved training in group facilitation and we encourage further exploration of tools for use during PE. The same goes for e-learning and tools supporting HCPs' awareness of their communication style, such as a validated self-assessment aiming to stimulate use of motivational interaction style [63].

Information on trainers and training development was unclear or lacking in several studies. Only one study mentioned involvement of patient representatives during training [37]. This is of interest as involving patient representatives during planning, delivery and evaluation of PE is increasingly considered essential for quality improvement in person-centered healthcare [64].

Several limitations and strengths of this review should be considered. We acknowledge that PE is a broad term and studies exploring training with a focus on overlapping topics such as clinical communication or recovery-based training were not included, as these have been reviewed elsewhere (e.g. [23,65]). For practical reasons, we decided to include training in delivery of PE grounded in cognitive behavioral theories but not those where the intervention was labelled therapy. This may have led to some relevant training being excluded. The snowballing method resulted in a considerable proportion of the included studies. This might indicate a potential for improvement in our original search strategy, but might also be considered a strength, as it complemented the original search. The inclusion of multiple HCP professions is an advantage, as PE is ideally provided by a multidisciplinary team and the results expand on reviews focusing on single professions, such as nurses [19]. Only the first author extracted the data but uncertainties were discussed with the second and last authors. We reported on 11 of the 13 recently proposed CRe-DEPTH criteria. Systematic inclusion of information on the two remaining criteria (educational resources and tailoring of training) would have further strengthened this review. However these criteria were addressed indirectly with information on educational material and tailoring embedded in our description of training methods. Reporting on the amount of detail in training descriptions, as suggested by the authors of CRe-DEPTH, would also have enhanced our results. In addition, we decided to place HCPs post-training experiences from the qualitative studies in a separate category, which allowed us to elaborate on barriers to and facilitators of implementing knowledge and skills but a detailed account of the results was beyond the scope of this review. Finally, we found the scoping review method suitable for our task, allowing inclusion of studies with different designs. We included a general evaluation of methodology but a scoping review does not aim to provide a rigorous quality assessment [22]. We acknowledge that although the quality of the qualitative studies was categorized as high with MMAT, a more specific instrument might have revealed added granularity on the quality, such as risk of primary study author bias.

4.2. Conclusion

This review includes 27 studies exploring training for HCPs aiming to promote competencies in group-based PE. The results show an expanding research field still in maturation. Firstly, the studies describe a wide variety of training. Duration ranged from three hours to five days and a minority included follow-up. Lectures and group discussions were the most commonly included training methods; more than half involved experiential learning, and use of educational tools was common. Secondly, many studies did not clearly describe the theoretical framework for the training or the training in group facilitation. More evaluations are therefore needed on theoretically grounded training with clear attention to training in group facilitation and continuous supervision and support. Thirdly, use of a comparison group, validated instruments and follow-up measures was rare. The results imply that HCPs generally react positively to participating in training. Several studies indicate positive short-term effects on self-efficacy and knowledge but findings on observed skills and patient outcomes were mixed. Qualitative findings of HCPs' experiences of PE following training involved benefits of the training but also barriers to making changes in practice due to perceived lack of skills in a new educator role, specifically regarding group facilitation. They suggested facilitating factors such as continuous support and clinical supervision.

This review shows that further evaluations on training for HCPs providing group-based PE is needed before conclusions on training efficacy can be made. The use of the CRe-DEPTH is recommended in reporting to further advance the field.

4.3. Practice implications

Positive reactions and indications of positive short-term effects of training interventions could inspire HCPs in developing and evaluating training for HCPs offering PE in groups. However, this review shows that further evaluation of training for HCPs providing group-based PE is needed to draw conclusions about training efficacy. Future evaluations should focus on theoretically grounded training with emphasis on group facilitation, continuous supervision and support. Inclusion of comparison group, validated instruments and follow-up measures is encouraged.

Funding details

This study was funded by the Norwegian National Advisory Unit on Learning and Mastery in Health at Oslo University Hospital.

Declaration of Competing Interest

There are no conflicts of interest to declare.

Acknowledgements

This study was funded by the Norwegian National Advisory Unit on Learning and Mastery in Health at Oslo University Hospital. We thank our colleagues at the Norwegian National Advisory Unit on Learning and Mastery in Health for their support, especially Siw Bratli, Ann-Helen Henriksen and Ann Britt Sandvin Olsson, and Janet Holmén for linguistic editing.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at https://doi.org/10.1016/j.pec.2020.12.006.

References

[1] J. Barlow, et al., Self-management approaches for people with chronic conditions: a review, Patient Educ. Couns. 48 (2002) 177–187, doi:http://dx.doi.org/10.1016/S0738-3991(02)00032-0.
[2] World Health Organization, Global Status Report on Noncommunicable Diseases 2014, World Health Organization, 2014 https://www.who.int/nmh/publications/ncd-status-report-2014/en/. (Accessed 28 December 2020).
[3] G. Lagger, Z. Pataky, A. Golay, Efficacy of therapeutic patient education in chronic diseases and obesity, Patient Educ. Couns. 79 (2010) 283–286, doi:http://dx.doi.org/10.1016/j.pec.2010.03.015.
[4] U. Stenberg, et al., A scoping review of the literature on benefits and challenges of participating in patient education programs aimed at promoting self-management for people living with chronic illness, Patient Educ. Couns. 99 (2016) 1759–1771, doi:http://dx.doi.org/10.1016/j.pec.2016.07.027.
[5] American Academy of Family Physicians, AAFP core educational guidelines: patient education, Am. Fam. Physician 62 (2000) 1712–1714 https://www.aafp.org/afp/2000/1001/p1712.html. (Accessed 28 December 2020).
[6] G. Pearce, et al., The PRISMS taxonomy of self-management support: derivation of a novel taxonomy and initial testing of its utility, J. Health Serv. Res. Policy 21 (2016) 73–82, doi:http://dx.doi.org/10.1177/1355819615602725.
[7] A. Bandura, W. Freeman, R. Lightsey, Self-efficacy: the Exercise of Control, Springer, 1999.
[8] K.R. Lorig, H.R. Holman, Self-management education: history, definition, outcomes, and mechanisms, Ann. Behav. Med. 26 (2003) 1–7, doi:http://dx.doi.org/10.1207/S15324796ABM2601_01.
[9] K. Odgers-Jewell, et al., Effectiveness of group-based self-management education for individuals with Type 2 diabetes: a systematic review with meta-analyses and meta-regression, Diabet. Med. 34 (2017) 1027–1039, doi:http://dx.doi.org/10.1111/dme.13340.
[10] U. Stenberg, et al., Health economic evaluations of patient education interventions a scoping review of the literature, Patient Educ. Couns. 101 (2018) 1006–1035, doi:http://dx.doi.org/10.1016/j.pec.2018.01.006.
[11] H.-L. Hwang, T.-Y. Kuo, Competency in delivering health education: a concept analysis, J. Interprofessional Educ. Pract. 11 (2018) 20–25, doi:http://dx.doi.org/10.1016/j.xjep.2018.02.005.
[12] A. Vågan, K. Eika, H. Skirbekk, Health education competence, self-management, Sykepleien Forskning 11 (2017), doi:http://dx.doi.org/10.4220/Sykepleienf.2016.59702.
[13] G. Engelund, U.M. Hansen, I. Willaing, "The Health Education Juggler": Development of a model describing educator roles in participatory, group-based patient education, Health Educ. 114 (5) (2014) 398–412, doi:http://dx.doi.org/10.1108/HE-09-2013-0052.
[14] K. Odgers-Jewell, et al., Group facilitators' perceptions of the attributes that contribute to the effectiveness of group-based chronic disease self-management education programs, Nutr. Diet. 72 (4) (2015) 347–355, doi:http://dx.doi.org/10.1111/1747-0080.12190.
[15] J. Byrne, et al., Deficiencies in postgraduate training for healthcare professionals who provide diabetes education and support: results from the Diabetes Attitudes, wishes and Needs (DAWN 2) study, Diabet. Med. 34 (8) (2017) 1074–1083, doi:http://dx.doi.org/10.1111/dme.13334.
[16] V. Stenov, et al., An ethnographic investigation of healthcare providers' approaches to facilitating person-centredness in group-based diabetes education, Scand. J. Caring Sci. 32 (2) (2018) 783–792, doi:http://dx.doi.org/10.1111/scs.12509.
[17] S. Hughes, et al., How do facilitators of group programmes for long-term conditions conceptualise self-management support? Chronic Illn. 16 (2) (2020) 104–118, doi:http://dx.doi.org/10.1177/1742395318792068.
[18] S. Hughes, et al., Goal setting in group programmes for long-term condition self-management support: experiences of patients and healthcare professionals, Psychol. Health 35 (1) (2020) 70–86, doi:http://dx.doi.org/10.1080/08870446.2019.1623891.
[19] V. Duprez, et al., The effectiveness of interventions to enhance self-management support competencies in the nursing profession: a systematic review, J. Adv. Nurs. 73 (8) (2017) 1807–1824, doi:http://dx.doi.org/10.1111/jan.13249.
[20] F. Davies, et al., Shifting mindsets: a realist synthesis of evidence from self-management support training, Med. Educ. 52 (3) (2018) 274–287, doi:http://dx.doi.org/10.1111/medu.13492.
[21] S. Lawn, X. Zhi, A. Morello, An integrative review of e-learning in the delivery of self-management support training for health professionals, BMC Med. Educ. 17 (2017) 183, doi:http://dx.doi.org/10.1186/s12909-017-1022-0.
[22] H. Arksey, L. O'Malley, Scoping studies: towards a methodological framework, Int. J. Soc. Res. Methodol. 8 (2005) 19–32, doi:http://dx.doi.org/10.1080/1364557032000119616.
[23] K. Jackson-Blott, et al., Recovery-oriented training programmes for mental health professionals: a narrative literature review, Ment. Health Prev. 13 (2019) 113–127, doi:http://dx.doi.org/10.1016/j.mhp.2019.01.005.
[24] F.J. Eiroa-Orosa, H. Garcia-Mieres, A systematic review and meta-analysis of Recovery educational interventions for mental health professionals, Adm. Policy Ment. Health Ment. Health Serv. Res. 46 (2019) 724–752, doi:http://dx.doi.org/10.1007/s10488-019-00956-9.
[25] D. Kirkpatrick, J. Kirkpatrick, Evaluating Training Programs: the Four Levels, Berrett-Koehler Publishers, San Fransisco, 2006.
[26] H.-F. Hsieh, S.E. Shannon, Three approaches to qualitative content analysis, Qual. Health Res. 15 (9) (2005) 1277–1288, doi:http://dx.doi.org/10.1177/1049732305276687.
[27] Q.N. Hong, et al., The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers, Educ. Inf. 34 (4) (2018) 285–291, doi:http://dx.doi.org/10.3233/EFI-180221.
[28] E.T. Adolfsson, et al., Implementing empowerment group education in diabetes, Patient Educ. Couns. 53 (3) (2004) 319–324, doi:http://dx.doi.org/10.1016/j.pec.2003.07.009.
[29] T.H. Andersen, N.F. Hempler, I. Willaing, Educator challenges using participatory methods in group-based patient education, Health Educ. 114 (2) (2014) 152–165, doi:http://dx.doi.org/10.1108/HE-07-2013-0032.
[30] B. Christou, J. Sellars, K. Barker, What are the experiences of therapists using the online back Skills training and implementing it within clinical practice? Musculoskeletal Care 17 (3) (2019) 198–205, doi:http://dx.doi.org/10.1002/msc.1397.
[31] E. Dures, et al., Training and delivery of a novel fatigue intervention: a qualitative study of rheumatology health-care professionals' experiences, Rheumatol. Adv. Pract. 3 (2) (2019), doi:http://dx.doi.org/10.1093/rap/rkz032.
[32] K. Parahoo, et al., Facilitators' delivery of a psychosocial intervention in a controlled trial for men with prostate cancer and their partners: a process evaluation, J. Adv. Nurs. 73 (7) (2017) 1620–1631, doi:http://dx.doi.org/10.1111/jan.13248.
[33] S. Peters, A. Wilkinson, H. Mulligan, Views of healthcare professionals on training for and delivery of a fatigue self-management program for persons with multiple sclerosis, Disabil. Rehabil. 41 (23) (2019) 2792–2798, doi:http://dx.doi.org/10.1080/09638288.2018.1478993.
[34] H. Richmond, et al., Exploring physiotherapists' experiences of implementing a cognitive behavioural approach for managing low back pain and identifying barriers to long-term implementation, Physiotherapy 104 (1) (2018) 107–115, doi:http://dx.doi.org/10.1016/j.physio.2017.03.007.

[35] V. Stenov, et al., Group-based, person-centered diabetes self-management education: healthcare professionals' implementation of new approaches, BMC Health Serv. Res. 19 (2019) 368, doi:http://dx.doi.org/10.1186/s12913-019-4183-1.
[36] J.E. Stephen, et al., Facilitating online support groups for cancer patients: the learning experience of psycho-oncology clinicians, PsychoOncology 20 (8) (2011) 832–840, doi:http://dx.doi.org/10.1002/pon.1791.
[37] S. Tveiten, et al., Hva karakteriserer et godt kurs i helsepedagogikk? -En fokusgruppeundersøkelse med bruker som medforsker [What characterizes a good course in patient education?], Nord. Sygeplejeforskning 6 (2016) 327–341, doi:http://dx.doi.org/10.18261/issn.1892-2686-2016-04-04.
[38] G.M. Burlingame, et al., Psycho–educational group treatment for the severely and persistently mentally ill: how much leader training is necessary? Int. J. Group Psychother. 57 (2) (2007) 187–218, doi:http://dx.doi.org/10.1521/ijgp.2007.57.2.187.
[39] A.C. Brooks, et al., Developing an evidence-based, multimedia group counseling curriculum toolkit, J. Subst. Abuse Treat. 43 (2) (2012) 178–189, doi:http://dx.doi.org/10.1016/j.jsat.2011.12.007.
[40] A.C. Brooks, et al., The roadmap relapse prevention group counseling toolkitTM: counselor adherence and competence outcomes, J. Subst. Abuse Treat. 45 (4) (2013) 356–362, doi:http://dx.doi.org/10.1016/j.jsat.2013.05.005.
[41] A. Hammond, P. Klompenhouwer, Getting evidence into practice: implementing a behavioural joint protection education programme for people with rheumatoid arthritis, Br. J. Occup. Ther. 68 (1) (2005) 25–33, doi:http://dx.doi.org/10.1177/030802260506800105.
[42] A. Keogh, et al., Feasibility of training physical therapists to deliver the theory-based self-Management of Osteoarthritis and low back Pain through Activity and skills (SOLAS) intervention within a trial, Phys. Ther. 98 (2) (2018) 95–107, doi:http://dx.doi.org/10.1093/ptj/pzx105.
[43] A. Keogh, J. Matthews, D.A. Hurley, An assessment of physiotherapist's delivery of behaviour change techniques within the SOLAS feasibility trial, Br. J. Health Psychol. 23 (4) (2018) 908–932, doi:http://dx.doi.org/10.1111/bjhp.12323.
[44] B. Turner, et al., Supporting the growth of peer-professional workforces in healthcare settings: an evaluation of a targeted training approach for volunteer leaders of the STEPS Program, Disabil. Rehabil. 36 (14) (2014) 1219–1226, doi:http://dx.doi.org/10.3109/09638288.2013.845251.
[45] G.M. Burlingame, et al., A systematic program to enhance clinician group skills in an inpatient psychiatric hospital, Int. J. Group Psychother. 52 (4) (2002) 555–587, doi:http://dx.doi.org/10.1521/ijgp.52.4.555.45523.
[46] M. Abdel-All, et al., Evaluation of a training program of hypertension for accredited social health activists (ASHA) in rural India, BMC Health Serv. Res. 18 (2018) 320, doi:http://dx.doi.org/10.1186/s12913-018-3140-8.
[47] D.C. Cooper, M.J. Bates, Military health provider training and evaluation of a problem-solving intervention to reduce distress and enhance readiness among service members, Mil. Med. 184 (5–6) (2019) e303–e311, doi:http://dx.doi.org/10.1093/milmed/usy229.
[48] D.A. Hurley, et al., Evaluation of an E-Learning training program to support implementation of a group-based, theory-driven, self-management intervention for osteoarthritis and low-back pain: pre-post study, J. Med. Internet Res. 21 (3) (2019), doi:http://dx.doi.org/10.2196/11123.
[49] M. Matsuda, A. Kono, Development and evaluation of a psychoeducation practitioner training program (PPTP), Arch. Psychiatr. Nurs. 29 (4) (2015) 217–222, doi:http://dx.doi.org/10.1016/j.apnu.2015.03.002.
[50] M. Sawtell, et al., Implementing a structured education program for children with diabetes: lessons learnt from an integrated process evaluation, BMJ Open Diabetes Res. Care 3 (1) (2015), doi:http://dx.doi.org/10.1136/bmjdrc-2014-000065.
[51] R. Torenholt, G. Engelund, I. Willaing, Bringing person-centeredness and active involvement into reality: The feasibility of a participatory concept for patient education, Health Educ. 115 (6) (2015) 518–533, doi:http://dx.doi.org/10.1108/HE-05-2014-0064.
[52] A.R. Varming, et al., Targeting "hardly reached" people with chronic illness: a feasibility study of a person-centered self-management education approach, Patient Prefer. Adherence 12 (2018) 275–289, doi:http://dx.doi.org/10.2147/PPA.S148757.
[53] D. Sánchez, et al., The potential in preparing community health workers to address hearing loss, J. Am. Acad. Audiol. 28 (6) (2017) 562–574, doi:http://dx.doi.org/10.3766/jaaa.16045.
[54] H. Richmond, et al., Using mixed methods evaluation to assess the feasibility of online clinical training in evidence based interventions: a case study of cognitive behavioural treatment for low back pain, BMC Med. Educ. 16 (2016) 163, doi:http://dx.doi.org/10.1186/s12909-016-0683-4.
[55] T.G. Reio, et al., A critique of Kirkpatrick's evaluation model, New Horiz. Adult Educ. Hum. Resour. Dev. 29 (2) (2017) 35–53, doi:http://dx.doi.org/10.1002/nha3.20178.
[56] V. Duprez, et al., The development and psychometric validation of the self-efficacy and performance in self-management support (SEPSS) Instrument, J. Adv. Nurs. 72 (6) (2016) 1381–1395, doi:http://dx.doi.org/10.1111/jan.12918.
[57] A. Van Hecke, et al., Criteria for describing and evaluating training interventions in healthcare professions–CRe-DEPTH, Nurse Educ. Today 84 (2020), doi:http://dx.doi.org/10.1016/j.nedt.2019.104254.
[58] P. Craig, et al., Developing and evaluating complex interventions: the new Medical Research Council guidance, BMJ 337 (2008) a1655, doi:http://dx.doi.org/10.1136/bmj.a1655.
[59] C. Heaven, J. Clegg, P. Maguire, Transfer of communication skills training from workshop to workplace: the impact of clinical supervision, Patient Educ. Couns. 60 (3) (2006) 313–325, doi:http://dx.doi.org/10.1016/j.pec.2005.08.008.
[60] V. Stenov, et al., The potential of a self-assessment tool to identify healthcare professionals' strengths and areas in need of professional development to aid effective facilitation of group-based, person-centered diabetes education, BMC Med. Educ. 17 (2017) 166, doi:http://dx.doi.org/10.1186/s12909-017-1003-3.
[61] R. Nossum, M.B. Rise, A. Steinsbekk, Patient education–Which parts of the content predict impact on coping skills? Scand. J. Public Health 41 (4) (2013) 429–435, doi:http://dx.doi.org/10.1177/1403494813480279.
[62] V.A. Entwistle, et al., "The more you know, the more you realise it is really challenging to do": tensions and uncertainties in person-centred support for people with long-term conditions, Patient Educ. Couns. 101 (8) (2018) 1460–1467, doi:http://dx.doi.org/10.1016/j.pec.2018.03.028.
[63] V. Duprez, et al., Capturing motivating versus demotivating self-management support: development and validation of a vignette-based tool grounded in Self-determination Theory, Int. J. Nurs. Stud. (2019), doi:http://dx.doi.org/10.1016/j.ijnurstu.2019.04.019.
[64] A. Strøm, M. Fagermoen, User involvement as sharing knowledge - an extended perspective in patient education, J. Multidisciplin. Health Care 7 (2014) 551, doi:http://dx.doi.org/10.2147/JMDH.S73343.
[65] D. Kerr, et al., The effectiveness of training interventions on nurses' communication skills: a systematic review, Nurse Educ. Today 89 (2020), doi:http://dx.doi.org/10.1016/j.nedt.2020.104405.